Panther Environmental Solutions Ltd,
Units 3 & 4, Innovation Centre,
Institute of Technology,
Green Road, Carlow, Ireland.
R93 W248.

Telephone /Fax: 059-9134222

Email: info@pantherwms.com
Website: www.pantherwms.com

CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT PLAN

MARTIN JENNINGS WHOLESALE LTD.,
KNOCKFEREEN,
BALLINROBE,
CO. MAYO

REPORT NO:	PES_C&D WMP_21164	**DATE:**	17th June 2021
AUTHOR:	Ross Donnelly-Swift, PhD	**REVIEWED:**	Mike Fraher, BSc.

TABLE OF CONTENTS

1. INTRODUCTION

Martin Jennings Wholesale Ltd are applying for planning permission for various proposed extensions to the meat processing facility at Neale Road, Ballinrobe, Co. Mayo. The development will involve an overall extension of 1,289m². As part of these works, a total of 164m^2 of the existing meat processing facility will be demolished.

The Environmental Protection Agency have requested;

2. Provide details of the waste management plan for any wastes generated during the works including the waste types, estimated quantities and proposed outlets to be used.

Panther Environmental Solutions Ltd (PES Ltd) is pleased to present this proposal for the preparation of a Construction & Demolition Waste Management Plan (C&D WMP) for the proposed development.

The purpose of the C&D WMP is to outline the manner in which construction and demolition waste will be managed throughout the construction phase of the proposed development, to ensure compliance with the relevant waste legislation and to ensure waste management activities from the site will not have an adverse impact upon the environment.

The C&D WMP details the types and estimated quantities of the wastes that will be generated, the waste management methods proposed for the site and waste storage details, in addition to outlining how waste will be managed in accordance with the waste hierarchy (Section 21A of the Waste Management Act 1996, as amended).

The C&D WMP will cover the following range of works associated with the construction phase of the project:

- Ground preparation works;
- Development of site infrastructure;
- Construction of buildings and hardstanding areas;
- Landscaping of entire site including open soft landscaped areas.

This plan also includes information on the legislative framework and policy framework for construction and demolition waste management in Ireland.

It should be noted that quantities of materials present in this report are estimated and subject to detailed design and therefore should not be taken as definitive.

This document has been prepared taking cognisance of the "*Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects*", published in 2006 by the Department of Environment, Heritage and Local Government (DoEHLG).

1.1 REQUIREMENT FOR THE PLAN

A Construction and Demolition Waste Management Plan should be prepared for proposed projects which meet or exceed the thresholds set out in the DoEHLG publication, "*Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects*", as outlined below:

- New residential development of 10 houses or more;
- New developments other than (1) above, including institutional, educational, health and other public facilities, with an aggregate floor area in excess of 1,250m^2;
- Demolition/renovation/refurbishment projects generating in excess of 100m^3 in volume, of C&D waste;
- Civil Engineering projects producing in excess of 500m^3 of waste, excluding waste materials used for development works on the site.

As the proposed development will of the comprise of the redevelopment of the existing facility with approximately 1,050m^3 in volume of C&D waste being generated, therefore a C&D WMP is required.

1.2 LIVE DOCUMENT

The C&D WMP is a "live" document, and will be reviewed and updated as necessary throughout the construction phase.

2. LEGISLATIVE FRAMEWORK AND PLANNING POLICY

2.1 LEGISLATIVE CONTEXT

The main legislation pertaining to waste management in Ireland and of potential relevance to the proposed development includes the following:

EU Legislation:

- Council Directive 1999/31/EC on the Landfilling of Waste;
- Waste Framework Directive 2008/98/EC;
- European List of Waste, Commission Decision 2000/532/EC;
- Council Directive 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC;
- WEEE Directive 2012/19/EU.

Irish Legislation:

- Waste Management Act 1996 as amended;
- Waste Management (Facility Permit and Registration) Regulations 2007 (S.I. 821 of 2007) and (Amendment) Regulations (S.I. 86 of 2008, S.I. 320 of 2014, S.I. 198 of 2015);
- Waste Management (Licensing) Regulations 2000 (S.I. 185 of 2000) , 2004 (S.I. 395 of 2004), (Amendment) Regulations 2010 (S.I. 350 of 2010);
- Waste Management (Planning) Regulations 1997 (S.I. 137 of 1997);
- Waste Management (Collection Permit) Regulations 2007 (S.I. 820 of 2007) and (Amendment) Regulations 2008 to 2016;
- Waste Management (Hazardous Waste) Regulations 1998 (S.I. 163 of 1998) and Waste Management (Hazardous Waste) (Amendment) Regulations 2000 (S.I. 73 of 2000);
- Waste Management (Food Waste) Regulations 2009 (S.I. 508 of 2009), European Union (Household Food Waste and Bio-waste) Regulations 2013 (S.I. 71 of 2013) and European Union (Household Food Waste and Bio-waste) Regulations 2015 (190 of 2015);
- European Union (Waste Electrical and Electronic Equipment) Regulations 2014 (WEEE) (S.I. 149 of 2014);
- European Union (Batteries and Accumulators) Regulations 2014 (S.I. 283 of 2014) and (Amendment) Regulations (S.I. 349 of 2014, S.I. 347 of 2015);
- Waste Management (Shipments of Waste) Regulations 2007 (S.I. 419 of 2007);
- European Communities (Shipments of Hazardous Waste Exclusively within Ireland) Regulations 2011 (S.I. 324 of 2011);
- Litter Pollution Act 1997, Litter Pollution Regulations 1999 (S.I. 359 of 1999) and Litter Pollution (Increased Notice Payment) Order 2007 (S.I. 558 of 2007);
- Waste Management (Landfill Levy) Regulations 2015 (S.I. 189 of 2015);
- Waste Management (Prohibition of Waste Disposal by Burning) Regulations 2009 (S.I. 286 of 2009) and (Amendment) Regulations (S.I. 504 of 2013, S.I. 538 of 2015, S.I. 599 of 2017);
- European Communities (Waste Directive) Regulations 2011 (S.I. 126 of 2011), (Amendment) Regulations 2016 (S.I. 315 of 2016), and European Union (Properties of Waste which Render it Hazardous) Regulations 2015 (S.I. 223 of 2015), European Union (Waste Directive) (Recovery Operations) Regulations 2016 (S.I. 372 of 2016);
- Local Government Act and associated regulations.

2.2 PLANNING POLICIES, PLANS AND OTHER GUIDANCE

Policies, plans and guidance documents pertaining to waste management and of potential relevance to the proposed development include the following:

- European Waste Catalogue and Hazardous Waste List (2002), Environmental Protection Agency;
- National Waste Prevention Programme Annual Report for 2019, Environmental Protection Agency;
- Connacht Ulster Regional Waste Management Plan 2015 – 2021 and Associated Reports;
- Mayo County Council (Presentation, Collection and Storage, of Household and Municipal Waste) Bye-laws 2007;
- Mayo County Development Plan 2014-2020;
- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (2006), Department of Environment, Heritage and Local Government.

Connacht Ulster Regional Waste Management Plan 2015 – 2021

The proposed development site is located within Ballinrobe, Co Mayo, and is therefore within the area covered by the Connacht Ulster Regional Waste Management Plan 2015 – 2021. This plan covers the ten local authority areas of Mayo County Council, Galway County Council, Galway City Council, Roscommon County Council, Sligo County Council, Leitrim County Council, Donegal County Council, Cavan County Council, Monaghan County Council. The vision of the waste management plan is as follows:

"*The strategic vision of the regional waste plan is to rethink our approach to managing waste, by viewing our waste streams as valuable material resources. Making better use of our resources and reducing the leakage of materials, as wastes, from our economies will deliver benefits economically and environmentally to the region.*".

"*The strategic approach of the plan places a stronger emphasis on preventing wastes and material reuse activities. The plan will also focus on enhancing the collection of quality materials from discarded waste to build on the positive progress made in recycling. The plan will strive to improve the recovery and generation of energy by maximising the resource value of the materials and energy embodied in residual wastes. Finally, the plan will seek to further reduce the role of landfilling in favour of higher value recovery options*."

"Three strategic targets have been set in the plan providing a clear focus and a transparent measure of success for the region. The targets cover the areas of prevention, recycling and landfilling, and their delivery will require the local authorities and industry to work together. The plan has also looked forward to 2030, demonstrating a long-term commitment to the strategic vision, with further goals set down including reaching a recycling rate of over 60%."

Mayo County Development Plan 2014-2020

Mayo County Development Plan 2014-2020 outlines three waste management objectives for the county, with the relevant objectives to the proposed development outlined in the table below. This plan will remain active until the County Development Plan is published (Mayo County Development Plan 2021-2027).

Table 2.1: CDP Waste Management Objectives Relevant to the Proposed Development

POLICY REFERENCE	POLICY
33.1	All service areas, storage areas and waste disposal areas must be adequately screened from public view by proper siting and screening with fences, courtyard walls and/or landscaping. Where a large waste disposal area is required it shall be located so that it is accessible for refuse vehicles.
33.2	Waste storage areas for developments shall be in accordance with Local Government Waste Storage Guide for Northern Ireland September 2010 Issue #110
56.3	Large scale agricultural development and/or agriculture-related industry involving processing farm produce will generally be permitted subject to proper planning and sustainable development. When considering such proposals the following will be taken into account: •Availability of existing structures/buildings on the farm holding for the development • Traffic safety • Pollution and waste control • Satisfactory treatment of effluents • Odour • Noise • Size and form of the structure and its integration into the landscape • Visual amenity of the area.

Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (2006)

These guidelines outline the manner in which construction and demolition waste should be managed throughout the construction phase of a project.

The guidelines outline the aspects which should be addressed in a Construction and Demolition Waste Management Plan, including waste arising, specific waste management objectives, methods proposed for prevention, reuse and recycling and material handling procedures.

3. DESCRIPTION OF THE PROJECT

3.1 LOCATION, DESIGN AND SCALE OF THE DEVELOPMENT

The proposed development site is located on the southern outskirts of the town of Ballinrobe. The surrounding area is dominated by pasture and peatland with the River Rathkelly approximately 450m to the north of the proposed site. The proposed development site comprises the main meat processing facility, a number of adjacent smaller structures and an area of hardcore and hardstanding. A number of agriculture fields extend west and south of the site and these are under the ownership of the applicant. These fields are outside of the proposed development site boundary. Access to the site is via Neale Road (R334) and approximately 650m north is the N84 primary road as shown in Figure 3.1 below.

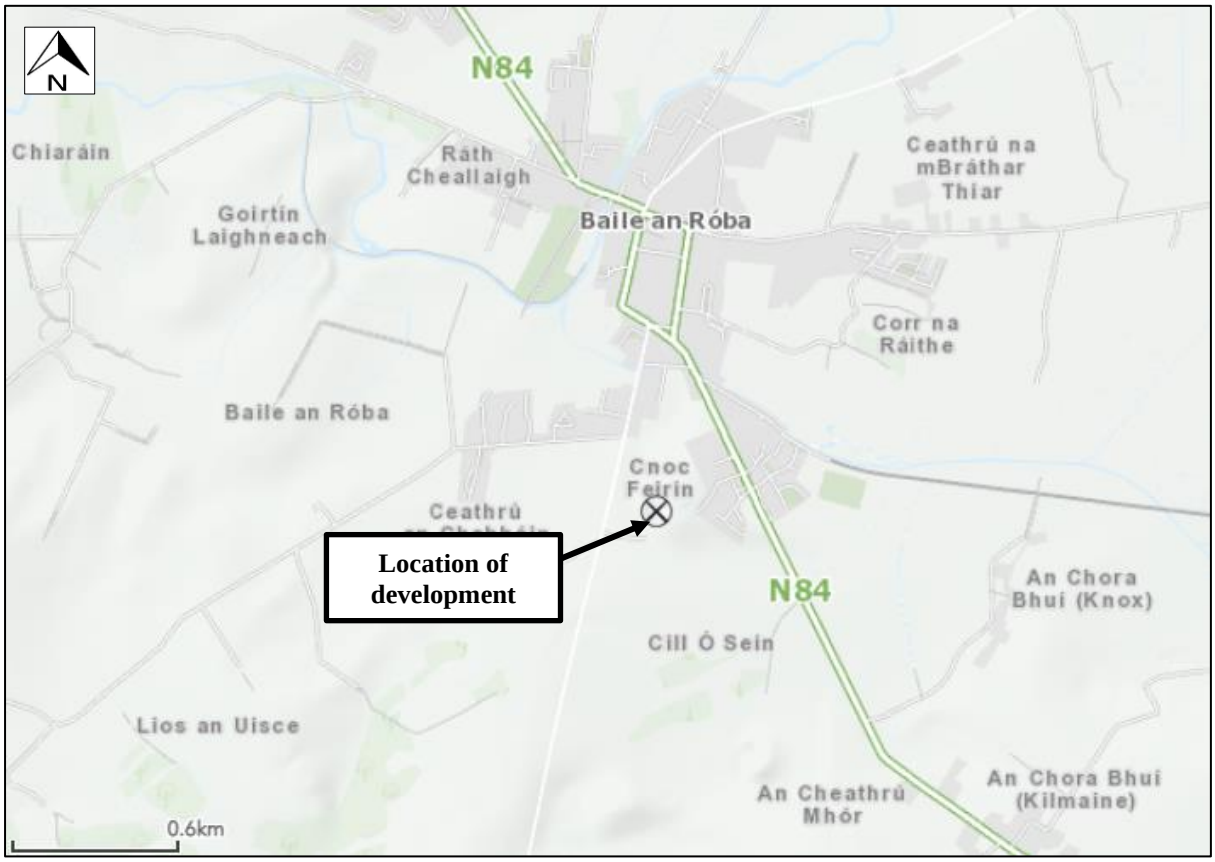


Figure 3.1: Location of Proposed Development at Neale Road, Ballinrobe Co. Mayo

The proposed development site measures approximately 3.61 hectares. The majority of the site is comprised of improved agricultural grassland and the rest is the existing meat processing facility, the adjacent outhouses and the areas of hardstanding. Areas of the existing facility will be demolished as part of the proposed development.

Figure 3.2: Site boundary and vegetation cover (Source; Google Earth 2021)

The gross floor area of the current site is 3,318m² with 1,169 m² of this to be maintained.

The proposed development will involve an overall extension of 1,289m² that includes;

- Extension to and retention of part of the existing Vacuum Pack and Chill Stores: 275m^2
- Extension to and retention of part of the existing Boning Hall and Chill Stores: 302m^2
- Extension to existing Lairage Building to include offices, toilets, archive store, upgrading and extension of Lairage/Delivery area 596m^2
- Extension to and retention of part of existing offices. Retention of storerooms at first floor level and external chill stores and sheds: 29m^2
- Extension of car parking area, new loading bay, ancillary works and services.

The expected construction operating hours will be from 8am to 6pm, Monday to Friday and 8am to 2pm on Saturday. All the above works to be undertaken on site. The overall construction timeframe will be 52 weeks.

A temporary site compound will be established within the proposed development site, which will house the waste receptacles for the project.

Table 3.1: Proposed Demolition Material

LOCATION	MATERIAL TYPE	TOTAL AMOUNT
Boning Hall	Paving	150m^3
Boning Hall	Excavated Material	100m^3
Boning Hall	Wall & Roof Cladding and Block Walls	50m^3
Lairage	Wall & Roof Cladding and Block Walls	10m^3
Lairage	Paving	10m^3
Lairage	Excavated Material	400m^3
Office	Wall & Roof Cladding and Block Walls	10m^3
Lairage	Paving	15m^3
Lairage	Excavated Material	5m^3
Vac Pac	Paving	150m^3
Vac Pac	Excavated Material	100m^3
Vac Pac	Wall & Roof Cladding and Block Walls	50m^3

The total amount of material from demolition is approximately 1,050m^3 of which 605m^3 is excavated soil/stones.

3.2 DETAILS OF WASTES TO BE GENERATED

During the project, construction and demolition waste ("C&D waste") will be generated at the site, with the main likely waste streams outlined in the table below.

Table 3.2: Predicted Main Construction Waste Streams

WASTE TYPE	EWC CODE	ORIGIN
Concrete	17 01 01	Waste concrete may arise due to surplus concrete from pouring activities.
Bricks	17 01 02	Damaged / defected brick waste may arise during the construction of the residential dwellings.
Tiles and Ceramics	17 01 03	Waste tiles / ceramics may arise during the construction of residential dwellings.
Mixture of Concrete, Bricks, Tiles and Ceramics	17 01 07	As detailed in 17 01 01, 17 01 02 and 17 01 03 above.
Wood	17 02 01	Wood waste may arise during the construction of the dwellings and shuttering works, due to damaged / defected wood, off-cuts and surplus wood.

WASTE TYPE	EWC CODE	ORIGIN
Glass	17 02 02	Glass waste may arise due to damaged / defected glass and accidental breakages.
Plastic	17 02 03	Plastic waste may arise due to damaged / defected products.
Metals (including alloys)	17 04 01 - 07	Waste metal may arise due to damaged / defected metal, off-cuts and surplus metal.
Soils and Stones	17 05 04	Excavated soils and stones waste will arise during site excavations and earth-moving activities.
Insulation Materials	17 06 04	Waste may arise due to damaged / defected insulation panels and off-cuts.
Gypsum-based Construction Material	17 08 02	Waste may arise due to damaged / defected product.
Bituminous mixtures, coal tar and tarred products	17 03	Waste may arise due to surplus material from tarring of internal road network.
Biodegradable waste	20 02 01	Green waste will arise during site clearance works, with the removal of existing vegetation at the site.

The temporary site compound, which will house the site offices and staff welfare facilities such as a canteen, will generate limited amounts of waste, including the following:

- Paper and cardboard – EWC 15 01 01 and EWC 20 01 01;
- Biodegradable / food waste – EWC 20 01 08;
- Plastics – EWC 15 01 02 and EWC 20 01 39;
- Metals – EWC 20 01 40;
- Mixed municipal waste – EWC 20 03 01;
- Sanitary waste – EWC 20 03 04.

Other waste materials which may arise during construction works in small volumes include:

- Waste Oils and Liquid Fuels – EWC 13 02 and EWC 13 07;
- Waste from Electrical and Electronic Equipment – EWC 16 02;
- Cables – EWC 17 04 11;
- Paints – EWC 20 01 28;
- Wood Preservatives – EWC 03 02;
- Batteries – EWC 16 06;
- Gypsum – EWC 17 08 02.

Wastes from EWC fractions EWC 03 02, EWC 13 02, EWC 13 07, EWC 16 02 and EWC 16 06 may be hazardous.

The Environmental Protection Agency (EPA) has published data on the typical breakdown of C&D waste in Ireland using 2018 as the reference year. The percentage breakdown of each waste type in a typical C&D waste stream is provided in the figure below.

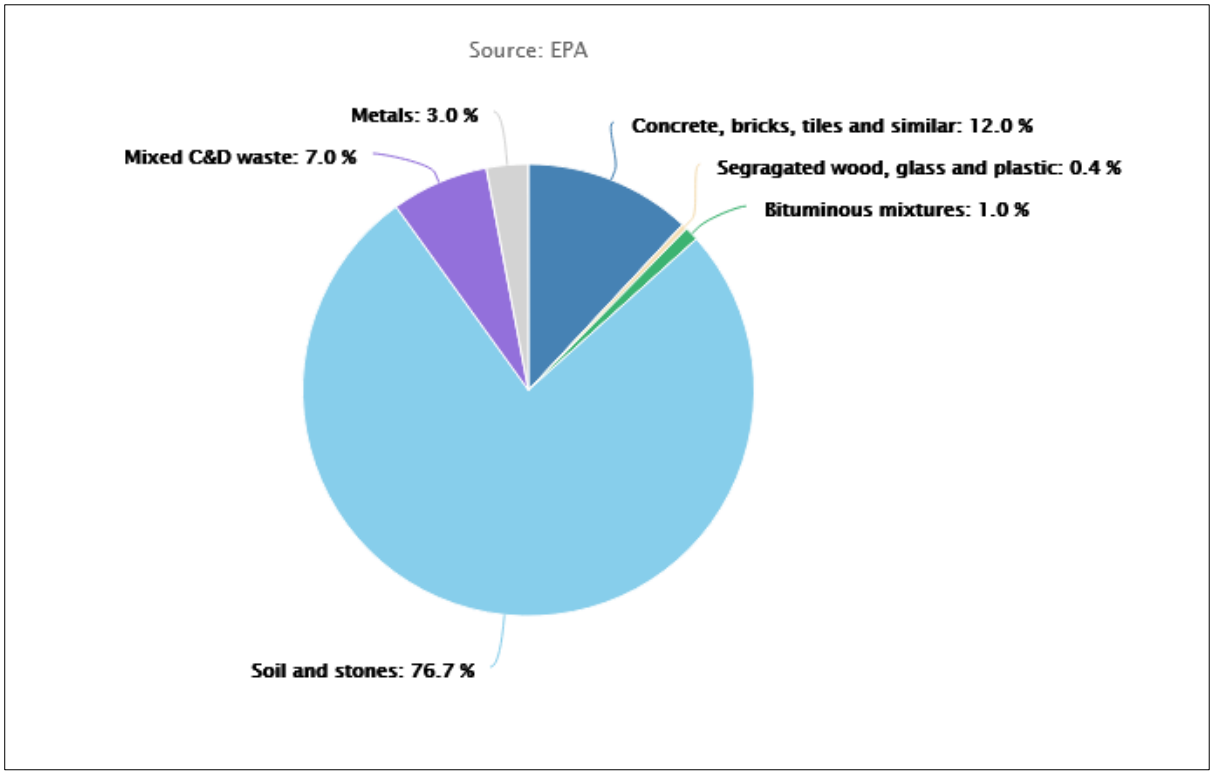


Figure 3.3: C&D Waste Material Streams in Reference to Total %, 2018 (Source: https://www.epa.ie/our-services/monitoring--assessment/waste/national-waste-statistics/construction--demolition/

The soil arising from excavations onsite will be used in the reinstatement and landscaping process where possible.
The estimated amount of material to be from the site is approximately 1,050m^3 and will be removed offsite to a licenced waste facility.

The BRE Waste Benchmark Data, published in June 2012, provides guidance on the construction waste estimates based on the gross internal floor area. This guidance relates to "new build" construction projects only. Table 3.4 below details the typical construction industry waste generation per 100m^2 floor area.

Table 3.4: BRE Waste Benchmark

PROJECT TYPE	NUMBER OF PROJECTS DATA RELATES TO	AVERAGE TONNES/100M^2
Residential	256	16.8
Public Buildings	23	22.4
Leisure	21	21.6
Industrial Buildings	**23**	**12.6**
Healthcare	22	12.0
Education	60	23.3
Commercial Other	4	7.0
Commercial Offices	14	23.8
Commercial Retail	48	27.5
Total number of projects	**471**	-

For an industrial building with a total floor area of 1,289m² (as discussed in Section 2.4), and an average of 12.6 tonnes of waste per 100m^2 of floor area, the construction waste generated translates to approximately 162.41 tonnes.

Table 3.5 below outlines the typical breakdown of construction and demolition waste type expected to be generated from a typical site such as this, based on the EPA Waste Data, *Construction & Demolition Waste Statistics For Ireland* (2018). The table also gives an estimate of the construction waste (breakdown) which might be generated based on information currently available. It should be noted that the figures below are estimates, and therefore, are for indicative purposes only. During the detailed design stage of the project, the construction works contractor would review the estimated volume of wastes to be generated.

Table 3.5: Construction Waste Materials Generated and Estimated Quantities

WASTE TYPES	PERCENTAGE (EPA FIGURES)	WASTE TONNES ESTIMATE
Soils and stones	76.7%	124.57
Mixed C&D waste	7.0%	11.36
Concrete, bricks, tiles and similar	12.0%	19.49
Metals	3.0%	4.87
Bituminous mixtures	1.0%	1.62
Segregated wood, glass, plastic	0.4%	0.65
Total	**100.1**	**162.65**

The total generation of waste during the project, excluding excavated soils, has been estimated at 37.99 tonnes. This has been calculated based upon the estimated number of skips which will be required during the project and the estimated weight of C&D waste based upon volume. Conversion factors used for calculations were taken from the Draft 16 UK Waste Classification Scheme. While an estimate for soils and stones is provided from the table above, it should be noted that this figure is very much an estimate, and does not take into consideration the topography of the site, or associated works with the residential development (for example internal roadways and pathways and laying of pipelines). The construction works contractor has assessed the site and has estimated that approximately 1,050m^3 of material would be generated at the site during demolition works with 605m^3 of this amount to be excavated soil/stones.

The following table outlines the estimated volumes of wastes to be generated during the project, in addition to the proposed project targets. It should be noted that the figures below are best estimates, and therefore, are for indicative purposes.

Table 3.6: EPA Final Treatment of C&D Waste Streams (2018) Estimated Volumes of Wastes Generated and Targets

WASTE TYPE	TONNES	REUSE / RECOVERY		RECYCLING		DISPOSAL	
		%	TONNES	%	TONNES	%	TONNES
Mixed C&D waste	11.36	25	2.84	68	7.72	7	0.79
Concrete, bricks, tiles and similar	19.49	77	15.00	23	4.48	0	0
Metal	4.87	0	0	100	4.87	0	0
Bituminous mixtures	1.62	67	1.08	33	0.53	0	0
Segregated wood, glass, plastic	0.65	15	0.09	85	0.55	0	0
TOTAL	37.99	-	19.01	-	18.15	-	0.79

4. WASTE ARISING

4.1 WASTE HIERARCHY

Throughout the construction phase, wastes generated will be managed by the client in order of priority in accordance with Section 21A of the Waste Management Act 1996, as amended, as per the waste hierarchy below.

Figure 4.1: The Waste Hierarchy

Wastes will be segregated as much as possible in order to avoid cross contamination. Where practical, the client will reduce the generation of wastes at source through measures such as the efficient ordering and purchasing of materials to reduce surplus materials, the correct storage and handling of materials to minimise the generation of damaged materials, the return of uncured concrete to the batching plant where possible and the re-using of shutters for concrete works.

Where it is not possible to avoid the generation of wastes, wastes will be sent for recycling or recovery as a priority. The reuse of materials onsite, such as excavated soils and damaged bricks / blocks, will reduce the requirement for imported material to the site.

The generation of waste for disposal will be minimised as much as is practical.

4.2 WASTE HANDLING

4.2.1 Waste Contractors

The waste contractor, or waste contractors, appointed for the project will have experience in C&D waste management and will be appropriately licenced, holding the relevant waste collection permit and / or waste licences for the types of waste anticipated to be generated during construction works.

The Waste Contractor will be appropriately licenced in compliance with the Waste Management (Collection Permit) Regulations 2007 (S.I. 820 of 2007), as amended (S.I. 87 of 2008), the Waste Management (Facility Permit and Registration) Regulations (S.I. 821 of 2007), as amended (S.I. 86 of 2008).

The construction works contractor would ensure that copies of all waste contractors' collection permits and licences would be available for inspection

4.2.2 Waste Storage Area

A designated waste storage area within the proposed development footprint, which must be kept away from the drainage network/manholes, would be established by the construction works contractor. Suitable waste receptacles / skips would be provided by the appointed waste contractor(s) during the construction phase, with skips / bins allocated to specific waste streams to avoid contamination. The number and size of waste receptacles / skips would be determined following the appointment of the waste contractor(s). Waste receptacles would be appropriately labelled.

Where waste fuels and oils are generated, they would be stored within a bunded container within the designated waste storage area. Any hazardous materials would be stored separately from non-hazardous waste, and would be stored within bunded containers / upon a bund where appropriate.

The removal of waste from the site would be undertaken on a regular basis, preventing large volumes of waste accumulating onsite.

4.2.3 Management of Waste Streams

As mentioned above, wastes generated would be managed by the construction works contractor in order of priority in accordance with Section 21A of the Waste Management Act 1996, as amended. Table 3.4 provides targets for the reuse, recovery, recycling and disposal of the various waste streams. It is proposed to send the following waste material to licenced waste facilities;

WASTE TYPE	EWC CODE
Concrete	17 01 01
Bricks	17 01 02

WASTE TYPE	EWC CODE
Mixture of Concrete, Bricks, Tiles and Ceramics	17 01 07
Bituminous Mixtures	17 03 02
Metals (including alloys)	17 04 01 - 07
Soils and Stones	17 05 04
Mixed C&D waste	17 09 04

Excavated Soils

As discussed in Section 3.2, it has been estimated by the construction works contractor, taking into consideration the site and works involved, that approximately 605m^3 of soils and stones would be generated at the site. Soils and stones arising from excavations would be reused in the reinstatement (for example as cut and fill activities and engineering fill) where possible. This would be investigated by the construction works contractor and would be subject to appropriate testing to ensure the material is suitable for its proposed end use.

Any excess excavated soils would be collected by a licenced waste contractor and either reused for reinstatement / landscaping activities at other sites if suitable or disposed of as appropriate. Demolition material is made up of concrete, rubble, wood, plasterboard and other materials used in the construction of buildings. All material will be removed to a licenced waste facility. Asbestos will be removed by specialist contractors and disposed at a suitable waste facility for this material. Demolition material from the building such as concrete and stone can be crushed, recycled and used on site (6F2); glass, timber, roofing and other materials will be disposed offsite in licensed waste facility.

The construction works contractor would investigate if excavated soils can be classified as a by-product under Article 27 of the Waste Directive Regulations, 2011. If a local use for the material is identified, and if the proposed end use meets the requirements of the Article 27 regulations, there would be no requirement to send this material to a waste facility. Any contamination of soil with an invasive species must require this soil to be treated before removal to a waste facility.

In the unlikely event of any evidence of soil contamination being found during work on site, the appropriate remediation measures would be employed. Areas of potentially contaminated soil would be isolated and tested for contamination in accordance with the 2002 Landfill Directive (2003/33/EC). Any work of this nature would be carried out in consultation with, and with the approval of, the EPA and the Environmental Department of Mayo County Council. Pending the results of laboratory testing, this material would be excavated and exported off-site, by an appropriately Permitted Waste Contractor holding an appropriate Waste Collection permit for this hazardous material, and would be sent for appropriate treatment / disposal to an appropriately Permitted / Licenced Waste Facility.

Concrete, Bricks, Tiles and Ceramics
Surplus concrete will be returned to the batching plant where possible. Waste concrete, bricks, tiles and ceramics will be crushed and used for ground-fill material where deemed suitable. Where these materials cannot be reused onsite, they should be diverted for recycling if possible.

Wood
Waste wood will be reused for shuttering where suitable. Wood that is uncontaminated (free from preservatives and paints) will be segregated and recycled.

Metal
Metal is highly recyclable and has a considerable rebate value. Where metal cannot be reused onsite, the majority will be recycled.

Glass
Small volumes of waste glass are expected to be generated. As glass can contaminate other segregated waste streams, it will be collected separately where possible. The majority of glass will be recycled.

Other Recyclables
Other recyclables include plastic, cardboard and office waste such as paper. Where possible, the different recyclables will be segregated onsite. With regards packaging waste, the client will investigate the possibility of returning the packaging to the supplier.

Waste Electrical and Electronic Equipment (WEEE)
This waste will be stored separately from other waste streams and will be covered pending collection.

Canteen Waste
Canteen waste will include food waste and packaging waste. Designated receptacles will be provided within the canteen to allow for segregation, to include for general waste, recycling and food waste.

Mixed Municipal Waste and Other Non-Recyclable Waste
Wastes not suitable for reuse or recycling will be stored in separate waste receptacles. Prior to removal from site, the Waste Manager or delegate will inspect the receptacles to ensure it contains no recyclable material or materials which can be reused.

Green Waste
Green waste will be generated during site clearance works, with the removal of vegetation. Green waste may be sent for composting.

Sanitary Waste
Sanitary waste from the port-a-loo toilets located within the temporary site compound will be collected by a licenced waste contractor on a regular basis.

4.3 HAZARDOUS MATERIALS

Small quantities of hazardous waste may be generated onsite, for example waste fuels and oils, batteries, paints and preservatives. Hazardous waste will be stored separately from non-hazardous waste, will be appropriately labelled and will be bunded where required. Hazardous waste will be managed in accordance with the Waste Management (Hazardous Waste) Regulations 1998 and 2000. The client will ensure that the waste contractor is licenced to transport / accept hazardous waste prior to the waste leaving the site. Depending on the type of hazardous material, the waste may be recovered, recycled or disposed of appropriately.

4.3.1 Asbestos Survey

An asbestos survey of the site will be carried out to determine its presence. Asbestos can be found in materials such as floor tiles and bitumen adhesive, Asbestos insulation boards (AIB), Asbestos rope, Compressed asbestos fibre (CAF). The areas for demolition were constructed post-2000 therefore the presence of asbestos is unlikely.
The risk associated with exposure to asbestos relates to the possibility that the fibres within the asbestos containing material (ACM) can become released into the air and are then inhaled. Breathing in air containing asbestos fibres can lead to asbestos-related diseases. Inhaled asbestos fibres contribute to increased risk of lung cancer, asbestosis and mesothelioma. Asbestos cement products, floor tiles and bitumen felt tiles are considered a low risk asbestos containing material. This is due to the products being considered low risk of asbestos being released from these materials during normal circumstances.

All material containing asbestos should be sent a to licenced waste facility for correct disposal and treatment. Laboratory test results should be submitted with the waste material to enable the waste facility to follow best management and disposal procedures.

All contractors working on the site should always remain vigilant to the possibility that concealed asbestos containing materials may be present on site. If any suspect asbestos containing materials are uncovered during the course of the work, works must stop in that area and the suspect material should be sampled and analysed immediately for the presence of asbestos.

All asbestos removal work must be carried out in accordance with S.I. No. 386 of 2006 Safety, Health and Welfare.

5. ESTIMATED COST OF WASTE MANAGEMENT

An outline of the costs associated with waste management during the project is provided below. The total cost of waste management during the project will be measured and will take into account the handling costs, storage costs, transportation costs, the revenue generated from recycling rebates and disposal costs including the landfill tax.

5.1 REUSE

Where materials are reused onsite, savings will be made in transportation costs and the associated recycling / recovery / disposal costs. Where materials cannot be reused onsite but may be reused elsewhere, for example topsoil, this material will often be taken from the site for a nominal fee or free of charge.

5.2 RECYCLING

Waste contractor recycling fees are considerably less than disposal costs. Where recycling streams are segregated, the associated fee may be further reduced. For some waste streams, for example metals, waste contractors will provide a rebate, which can be offset against the costs of collection and transportation. See Mayo Co Co for Recycling and Waste Disposal Centres.

5.3 DISPOSAL

Disposal rates in the Mayo will vary depending on the type of material for disposal (example Plasterboard recycling €275 per tonne, and Inert Construction and Demolition waste €25 per tonne. All waste must comply with the Waste Management (Landfill Levy) Regulations 2015 (S.I. 189 of 2015). Waste contractors will also impose a charge for the collection of the waste skips. Where C&D waste is segregated from other wastes, waste contractors may charge less, as they may be able to salvage items from the waste, such as clean rubble for fill material, prior to disposal. See link for Mayo County Council list of authorised waste facilities. See http://www.nwcpo.ie for list of authorised hazardous waste facility sites.

6. DEMOLITION PLAN

The principle objective of a Demolition Plan is to ensure that in projects where a building or structure requires demolition, the sequence of operations to be followed is predetermined and documented, thereby ensuring that an appropriately selective dismantling / demolition methodology is employed.

6.1 MEASURES DURING DEMOLITION PHASE

Measures to be taken during the demolition phase should include the following;

The contractor should consider:

- During demolition works dust netting shall be placed around the site boundary;
- High Power water misting / spraying plant shall be used during the demolition activities to suppress and control dust emissions.
- The age of the structure;
- Its previous use;
- Nearby buildings or structures;
- The weight of removed material or machinery on floors above ground level;
- The type of construction;
- Materials must be removed from the site in a timely manner and not stocked piled for long periods of time;
- Hazardous materials must be disposed of properly at a licence waste facility;
- The demolition plan should identify the sequence required to prevent accidental collapse of the structure;
- Deliberate controlled collapse with safe zones and restricted access;
- Installing protective cladding and lining along exposed surfaces to weatherproof if required;
- Cognisance would be taken of the National Roads Authority's "*Guidelines for the Treatment of Noise and Vibration in National Road Schemes*", the British Standard 5228: Part 1 "*Code of practice for Noise Control on Construction and Open Sites*" and the CIRIA 2015 "*Environmental Good Practice on Site*";

6.2 DUST MANAGEMENT

The following dust control measures would be implemented by the construction works contractor for the duration of the construction of the proposed development:

- Cognisance would be taken of the guidelines published by the Institute of Air Quality Management (IAQM), "*Assessment of dust from demolition and construction 2014*";

- During demolition works dust netting shall be placed around the site boundary;
- High Power water misting / spraying plant shall be used during the demolition activities to suppress and control dust emissions.
- Material handling systems and site stockpiling of materials would be designed and laid out to minimise exposure to wind;
- Prolonged storage of materials onsite would be avoided;
- When transporting materials to and from the site, vehicles would be fitted with covers where possible to prevent material loss;
- Demolition stockpiles shall be kept to an absolute minimum and all C&D waste shall be promptly removed from site.
- Where drilling or pavement cutting, grinding or similar types of stone finishing operations are taking place, measures to control dust emissions will be used to prevent unnecessary dust emissions by the erection of wind breaks or barriers. All concrete cutting equipment shall be fitted with a water dampening system.
- Public roads outside the site would be regularly inspected for cleanliness and cleaned as necessary. A road sweeper would be used where required;
- The overloading of trucks exiting the site shall not be permitted.
- All plant not in operation shall be turned off and idling engines shall not be permitted for excessive periods.
- While the natural recolonization of exposed areas of soil during reinstatement activities is preferred, re-seeding would be undertaken where required to promote the rapid stabilisation of soils;

Regular visual inspections would be undertaken around the proposed site boundary to monitor the effectiveness of dust control measures

7. ROLES, RESPONSIBILITIES AND TRAINING

7.1 ROLES AND RESPONSIBILITIES

Project Manager

The Project Manager will be responsible for the overall implementation of the Construction and Demolition Waste Management Plan. The Project Manager will ensure that there are sufficient resources available to support the implementation of this C&D WMP.

Waste Manager

The client will appoint a Waste Manager from the construction team. This will most likely be the EHS Officer for the site. The Waste Manager will be suitably trained in waste management, in how to maintain a waste record keeping system and how to perform waste audits for the site.

The Waste Manager will have overall responsibility for waste management at the site, and, in addition to the Project Manager, will be responsible for the implementation of the C&D WMP. The role of the Waste Manager will ensure that the opportunity is taken to educate all colleagues, site staff, including external contractors and suppliers, about alternatives to conventional construction waste disposal. The Waste Manager will liaise with the Project Manager on a regular basis with regards the implementation of the C&D WMP.

Site Staff

All site personnel will be responsible for the effective implementation of the C&D WMP, and will be trained on waste management by the Waste Manager.

7.2 TRAINING

Training of site personnel, sub-contractors and any other relevant personnel will be the responsibility of the Waste Manager. A waste training programme will be organised and will be included as part of induction training and also via toolbox talks where required. The training programme will communicate the contents of the C&D WMP, discuss the waste hierarchy and detail the segregation of waste materials at source and storage methods. The training programme will also include a section on hazardous wastes, and the dangers of hazardous waste explained.

The waste training programme will aim to train site personnel so that they are in a position to:

- Distinguish reusable materials from materials suitable for recycling;
- Ensure maximum segregation at source;
- Co-operate with site manager on the best location’s for stockpiling reusable materials;
- Separate materials for recovery;
- Identify and liaise with operators of waste collection and waste management operators.

8. RECORD KEEPING

The client will develop a record keeping system that will ensure that details of all waste types generated at the site, in addition to movement and treatment, are recorded. All materials being transferred from the site, whether for recycling or disposal, will be subject to a documented tracking system which can be verified and validated.

The Waste Manager will record the following:

- Waste removed for reuse offsite;
- Waste removed for recycling;
- Waste removed for disposal;
- Reclaimed waste materials brought on-site for reuse.

The Waste Manager will maintain copies of the waste contractors' relevant waste collection permits and waste licences.

For each movement of waste and for each type of waste, the client will obtain a signed waste docket from the waste contractor, detailing the weight, type of material, source and destination of material. Where possible, this system will be linked to the delivery records for the site, which will allow the percentage of C&D waste generated per material to be determined.

9. WASTE AUDITING PROCEDURE

Waste auditing during the construction phase of the project will be the responsibility of the Waste Manager.

The Waste audit will cover the following elements:

- A systematic study of all waste management practices which have been adopted onsite;
- Special attention should be dedicated to obvious opportunities for waste reduction, but all areas and stages within the project should be reviewed;
- Details of raw material inputs and the quantity, type and composition of all waste from the site should be identified
- The audit findings should highlight corrective actions that may be taken in relation to management policies or site practices in order to bring about further waste reductions
- A tracking system shall be stipulated to determine the success or failure of corrective actions

The Waste Manager will review all records for the waste generated onsite, in addition to records for waste transferred offsite. This will be undertaken on a quarterly basis as a

minimum. The Waste Manager will check that a signed waste docket is available for each movement of waste and for each type of waste. Should waste movements not be accounted for, the reasons should be investigated to determine why the record keeping system, as discussed in Section 8 above, has not been maintained.

Each waste type will be examined, in order to determine where the largest percentage of waste generation occurred. This will allow the client to prioritise and address specific waste streams, and will assist in setting targets.

Waste management costs will also be reviewed as part of the Waste Audit.

Upon completion of the construction phase, a final summary report will be prepared, summarising the outcomes of the waste management processes adopted and the total reuse / recycling / recovery / disposal figures for the project.

Ongoing consultation with the waste contractor(s) and Mayo County Council will be undertaken to ensure that the best practicable option is being followed for waste management at the site.

10. CONSULTATION WITH RELEVANT BODIES

Upon planning approval, the client will begin the process of engaging with waste contractors for the proposed development. The waste contractor(s) will have experience in C&D waste management and will be appropriately licenced, holding the relevant waste collection permit and / or waste licences for the types of waste anticipated to be generated during construction works. Where required, upon appointment of the waste contractor(s) for the project, details of the proposed destination of each waste stream will be provided to Mayo County Council.

11. REFERENCES

BRE Waste Benchmark Data (June 2012), Available at: http://www.smartwaste.co.uk/filelibrary/benchmarks%20data/Waste_Benchmarks_for_new_build_projects_by_project_type_31_May_2012.pdf

Department of Environment, Heritage and Local Government (2006) *Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects*.

EN BS 5228-1:2009 "*Code of practice for noise and vibration control on construction and open sites*".

Environmental Protection Agency (2002) *European Waste Catalogue and Hazardous Waste List*.

EPA - Construction & Demolition Waste Statistics for Ireland (2019), Available at: https://www.epa.ie/our-services/monitoring--assessment/waste/national-waste-statistics/construction--demolition/

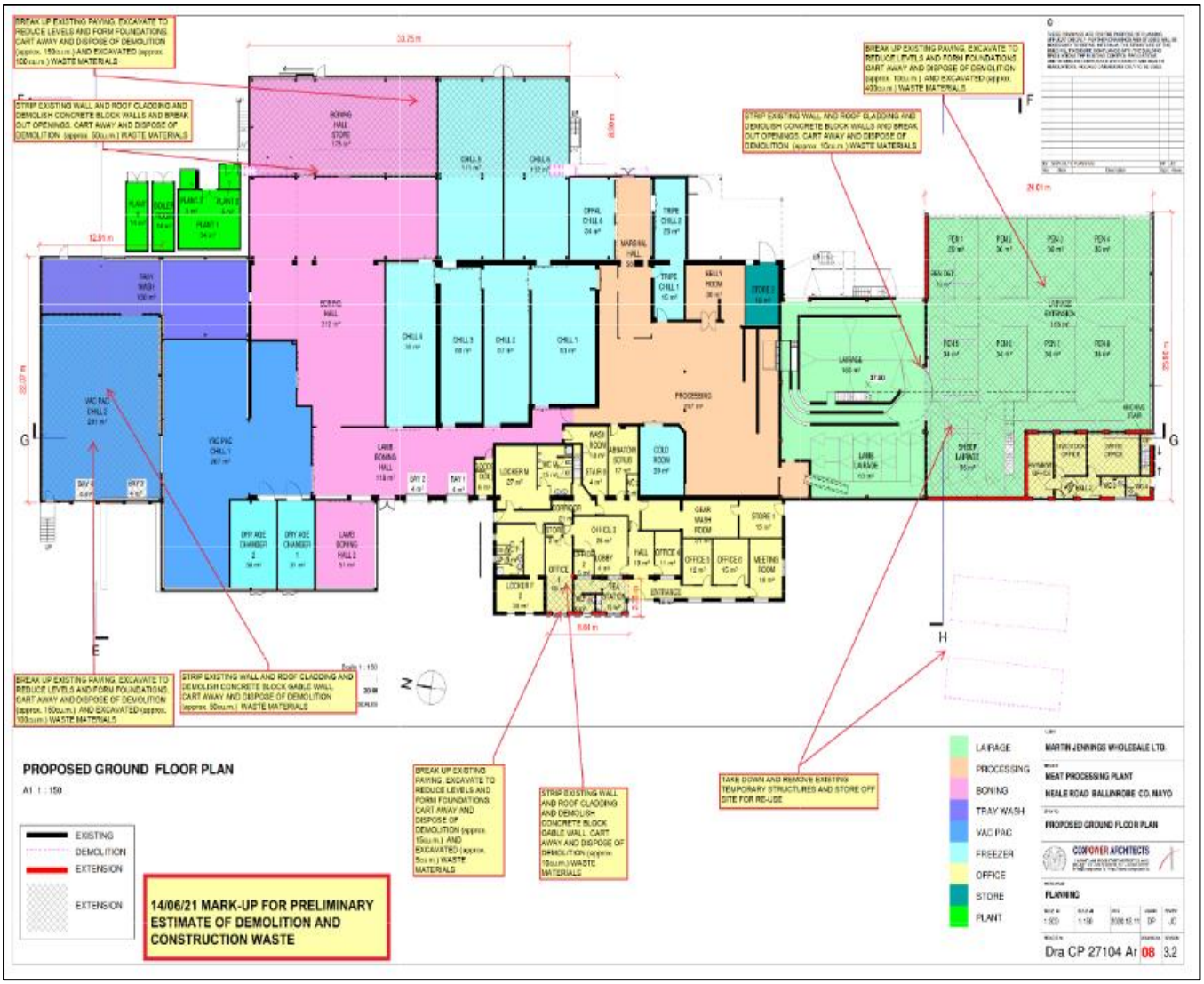
Institute of Air Quality Management (2014) *Assessment of dust from demolition and construction 2014*.

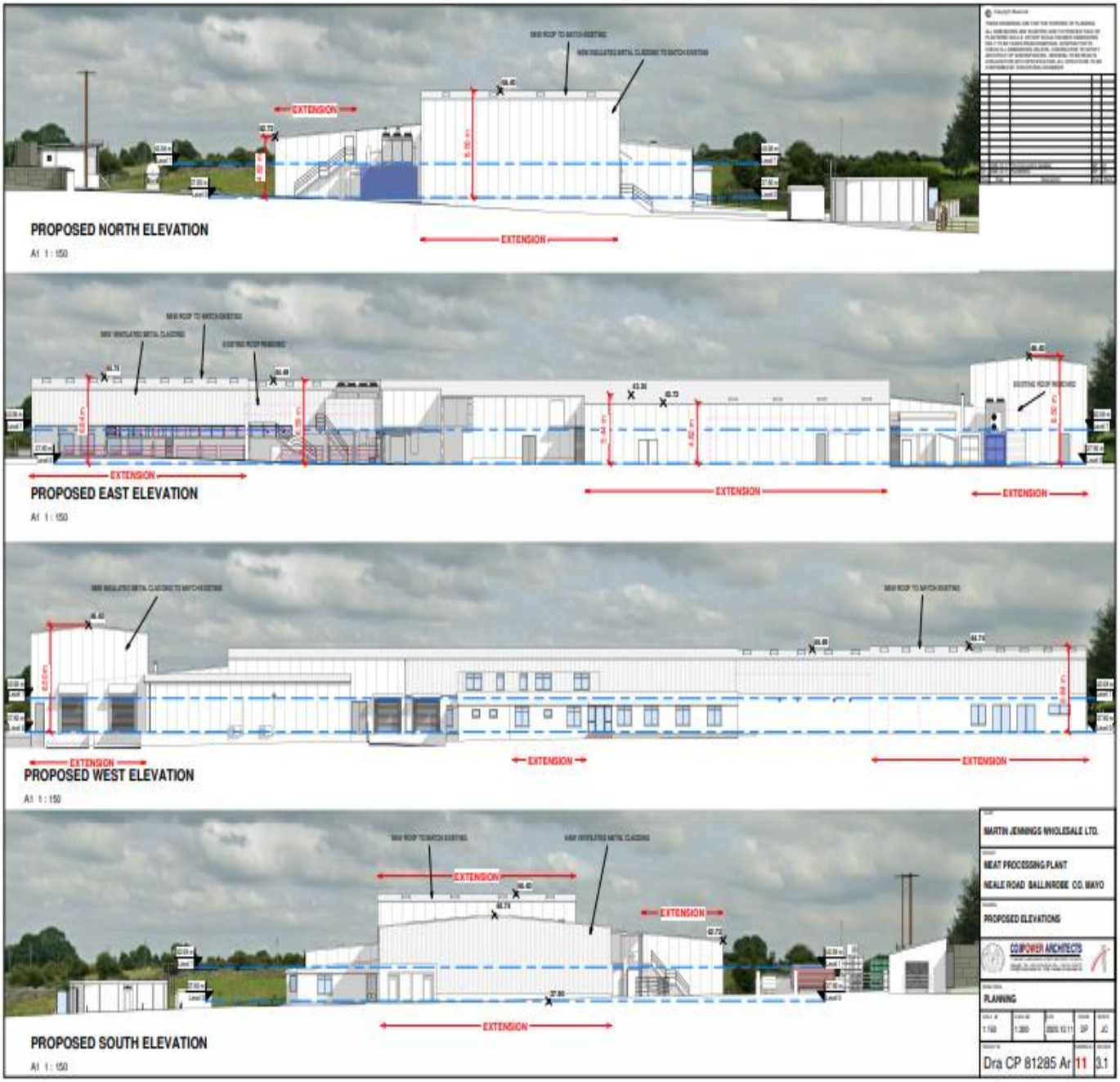
Mayo County Council (2015) *Connacht Ulster Regional Waste Plan 2015-2021*.

Mayo County Council (2014) *Mayo County Development Plan 2014-2020*.

APPENDIX A

PROPOSED DEVELOPMENT LAYOUT


BREAK UP EXISTING PAVING, EXCAVATE TO REDUCE LEVELS AND FORM FOUNDATIONS, CART AWAY AND DISPOSE OF DEMOLITION (approx. 150cu.m.) AND EXCAVATED (approx. 100 cu.m.) WASTE MATERIALS
STRIP EXISTING WALL AND ROOF CLADDING AND DEMOLISH CONCRETE BLOCK WALLS AND BREAK OUT OPENINGS, CART AWAY AND DISPOSE OF DEMOLITION (approx. 50cu.m.) WASTE MATERIALS
BREAK UP EXISTING PAVING, EXCAVATE TO REDUCE LEVELS AND FORM FOUNDATIONS, CART AWAY AND DISPOSE OF DEMOLITION (approx. 150cu.m.) AND EXCAVATED (approx. 400cu.m.) WASTE MATERIALS
STRIP EXISTING WALL AND ROOF CLADDING AND DEMOLISH CONCRETE BLOCK WALLS AND BREAK OUT OPENINGS, CART AWAY AND DISPOSE OF DEMOLITION (approx. 100cu.m.) WASTE MATERIALS
BREAK UP EXISTING PAVING, EXCAVATE TO REDUCE LEVELS AND FORM FOUNDATIONS, CART AWAY AND DISPOSE OF DEMOLITION (approx. 150cu.m.) AND EXCAVATED (approx. 100cu.m.) WASTE MATERIALS
STRIP EXISTING WALL AND ROOF CLADDING AND DEMOLISH CONCRETE BLOCK GABLE WALL, CART AWAY AND DISPOSE OF DEMOLITION (approx. 50cu.m.) WASTE MATERIALS
PROPOSED GROUND FLOOR PLAN
A1 1 : 150
EXISTING
DEMOLITION
EXTENSION
EXTENSION
14/06/21 MARK-UP FOR PRELIMINARY ESTIMATE OF DEMOLITION AND CONSTRUCTION WASTE
BREAK UP EXISTING PAVING, EXCAVATE TO REDUCE LEVELS AND FORM FOUNDATIONS, CART AWAY AND DISPOSE OF DEMOLITION (approx. 150cu.m.) AND EXCAVATED (approx. 50cu.m.) WASTE MATERIALS
STRIP EXISTING WALL AND ROOF CLADDING AND DEMOLISH CONCRETE BLOCK GABLE WALL, CART AWAY AND DISPOSE OF DEMOLITION (approx. 10cu.m.) WASTE MATERIALS
TAKE DOWN AND REMOVE EXISTING TEMPORARY STRUCTURES AND STORE OFF SITE FOR RE-USE
LAIRAGE
PROCESSING
BONING
TRAY WASH
VAC PAC
FREEZER
OFFICE
STORE
PLANT
MARTIN JENNINGS WHOLESALE LTD.
MEAT PROCESSING PLANT
NEALE ROAD BALLINROBE CO. MAYO
PROPOSED GROUND FLOOR PLAN
COFFEY ARCHITECTS
PLANNING
Dra CP 27104 Ar 08 3.2


PROPOSED NORTH ELEVATION
At 1 : 150
EXTENSION
PROPOSED EAST ELEVATION
At 1 : 150
EXTENSION
PROPOSED WEST ELEVATION
At 1 : 150
EXTENSION
PROPOSED SOUTH ELEVATION
At 1 : 150
EXTENSION
MARTIN JENNINGS WHOLESALE LTD.
MEAT PROCESSING PLANT
NEALE ROAD BALLINROBE CO. MAYO
PROPOSED ELEVATIONS
COMPOWER ARCHITECTS
PLANNING
Dra CP 81285 Ar 11 0.1